

PRiMO IKE Hui Technical Input for the National Climate Assessment – Tribal Chapter

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PRiMO IKE Hui Meeting – January 2012

Introduction:

The Pacific Islands are especially vulnerable to the impacts of climate change and variability, including: sea-level rise, ocean acidification, droughts, increased extreme weather events and others. Resilient coastal communities plan for and take deliberate actions to reduce risks from coastal hazards, accelerate recover from disaster events, and adapt to changing conditions related to climate change. The Pacific Risk Management 'Ohana (PRiMO) is a network of federal, state, local, private sector partners committed to enhancing the resilience of Pacific Island communities through risk management. PRiMO recognizes the value of collective action and works through partnerships to improve coordination, build regional capacity in risk management, and strengthen and sustain resilient communities.

The Indigenous Knowledge and Education (IKE) Hui is a working group of the larger PRiMO body dedicated to increasing awareness and incorporation of indigenous and local knowledge into the work that we do and the decisions that we make. Because of the connection to the various agencies and organizations involved in PRiMO, the IKE Hui is uniquely qualified to serve as organizer and host of this meeting to gather information on Pacific Island perspectives on climate change.

Meeting Participants:

The IKE Hui hosted a Climate Change and Indigenous Cultures forum in Hawaii in January 2012. The Hui is invited kūpuna (elders) and cultural practitioners from around the Pacific to discuss and share their 'ike (knowledge, awareness, understanding, recognition) around the natural environment, the health and sustainability of communities, impacts to culture, and our communities' ability to adapt to those impacts related to climate change. Specifically, we were looking to capture information on observations, impacts, and community capacities to adapt.

In addition to the kūpuna, it was important to include an intergenerational aspect to our meeting. Because of this, we invited colleagues who are cultural practitioners as well as experts in the field of climate change research and adaptation. These participants were selected for their connection to the work on the ground with communities and those who support them. This group, among others, will also include contributors and writers of the Pacific Chapter of the National Climate Assessment. It is our hope that they were able to capture and interpret the information from the kūpuna into relevant and insightful to be used as data points and case studies in their sections.

Finally, we hope to incorporate the next generation of practitioners and scientists into our meeting. Through its work in the community, the IKE Hui has developed relationships with Kanu o ka 'Āina Learning 'Ohana (Kanu), a public charter school located in Waimea on Hawai'i Island. Kanu is a Hawaiian-focused, bi-lingual public charter school serving children in grades K – 12. We have invited the

students of Kanu to participate in this meeting to serve as hosts with us, participating in welcoming cultural protocols as well as ceremony throughout the three days. The leaders of Kanu were excited about the opportunity for their students to be included in a gathering like this that allows their students to see how their culture and values are integral to solving the problems of today and tomorrow. In addition to the benefits to the students of Kanu, we believed that incorporating them in our meeting helped to serve as a very tangible reminder of why we all gathered. The issues we focused on and discussed were neither academic nor theoretical and incorporating their perspectives into our conversation only enhanced our conversation and understanding.

Meeting Outcomes:

Information from the meeting were recorded in a variety of ways. Because many of our indigenous cultures practice an oral tradition, our intention was to allow our elders and other participants to discuss topics and interact in this fashion, avoiding the more common Western practice of capturing information on flip charts and power points in the room. A transcription of the conversations were kept in order for those contributing to chapters in the National Climate Assessment to refer back to when incorporating information from the meeting. We did not anticipate a formal report would be generated from this meeting. Instead, we developed case studies, observational data, and references organized by the different sectors and sub-sectors identified by both the Tribal Lands and Resources and Pacific chapter writers.

In addition to written notes, we video recorded parts of the meeting as well as conducted short video and audio interviews of both elders and other participants. These video and audio clips were used to create a multimedia record of the meeting incorporating music, chanting, stories, and more. This piece were not available before the writing pieces were due to the national committee, but we do hope to share this with any interested partners and PRiMO partners via the PRiMO website.

Meeting Significance:

The original motivation for organizing this meeting was to gather elders and practitioners to contribute information and case studies to the Tribal chapter of the National Climate Assessment. We thought it was a great opportunity to include some Pacific Island indigenous perspectives into the chapter along with the rich tribal information already being gathered. Loosely fashioned after the discussions we participated in at the Great Lakes Tribal Climate Change Summit sponsored by the College of Menominee Nation Sustainable Development Institute. We purposely included some of the speakers and participants from that discussion to our meeting here in the Pacific to learn from each other and inform the broader national discussion.

In addition to contributing to the Tribal chapter, we worked closely with the Pacific Island Regional Climate Assessment (PIRCA) team. PIRCA was formed around the need to collaborate on collecting information and writing the Pacific Chapter of the National Climate Assessment. PIRCA writers were important to the planning of this meeting to ensure that the information that we gathered was incorporated into the chapter.

Aside from contributing to the writing of the National Climate Assessment, the information from this meeting will also be used for other in partnership with other initiatives as well. Once we began to talk to partners who are working in the field of climate change in Hawai'i about the meeting we were putting together, we began to see how many opportunities there were to leverage the discussions, relationships, and information from this meeting with other initiatives and events taking place in the Pacific and nationwide. Based on initial discussions, we immediately saw opportunities to continue the conversation around indigenous cultures and climate change in March at the PRiMO Annual Meeting, April/May in partnership with the Center for Island Climate Adaptation Policy (ICAP) meeting, and possibly a national forum for indigenous and tribal perspectives on climate change. Partners in these

initiatives see this as way to build upon each other's meetings and events to gain some momentum around the topic and hopefully move the discussion forward in meaningful ways that will promote action.

The following information was derived from our meeting.

PRiMO Ike Hui

Observations of Change:

Kalani Souza (Director Olohana Foundation) – **Plants flowering more quickly** – avocado bearing fruit after two years instead of 6-8. Ti flowering with profusion not previously observed. This could be a sign that that plants know that something is changing. They are seeding earlier and more often in preparation for the changes.

Rainy season arriving later and ending sooner with increased rainfall volume and flooding. Makahiki no longer correlates with the rain cycles as it used to.

No more Kona wind generated rain storms. **Rainfall pattern is unpredictable. Not enough water for agriculture.** Rains are passing by Maui, when before they used to fall there.

Increased severe weather events. TORNADOS more extreme and storm systems generating more tornados (3,4,5 per system). **Dan Wildcat**

Drought. Extreme heat in the summer. Reduction in nighttime cooling – used to drop from 100 to 70 F – now stays at 80F – makes it hard for folks to rest at night without artificial cooling. Dan Wildcat

Corn is ripening earlier – Green Corn Festival is usually in mid-July, but the corn is ripening in June. - Daniel Wildcat -

Whale migration is occurring later. Great White Sharks coming more often – ‘highway is changing in ocean’ - Cliff Naiole (Cultural Advisor to Ritz Carlton on Maui, Tribal Elder)

The rain falls between the islands, not on the land. There are those that know how to call the rain, but we don't have enough people who know how to do that anymore. (The holy people *thought* the world into reality. They did not *make* it a reality.)- Aunty Rayleen Kawaiaea (Hawaiian Elder; Queen Lilioukalani Foundation;) –

“You give so little to the earth and you get so much back.” - Penelope Livingston (Regenerative Design Institute)

The plants blooming are saying “take the seeds and store them for the time to come.”

It is within our power to prepare.

Doc Tusi story about an elder in a Samoan village who asked to be taken home from the hospital to die. When he got home, he listened and said that the breathing of the tide is not well. He heard the cries

from the earth. Indigenous peoples are attuned to the breath of the ocean, the messages in the winds and the clouds, and the beat of the earth. - Papali'i Failautusi Avegalio PhD) (Executive Director Pacific Business Center and Schiedler College of Business U of HI – Samoan Elder).

Subsistence is dependent on natural weather patterns. Goal is to get back to eating local native foods and not shipping in products from other parts of the world. Subsistence (implied intimate relationship with the land, water, rain, winds, etc) puts people into a more direct feedback loop.

How can an indigenous perspective contribute to understanding the earth?

“When you say, ‘ my mother is in pain,’ it’s very different from saying ‘ the earth is experiencing climate change and other difficulties.’ – Doc Tusi

“You do not heal by seeing the illness. You heal by seeing the wellness” – Aunty Rayleen

Don’t just talk about the past. Talk about the past with a purpose.

“Everywhere I’ve been, the people who are responsible for what is left hold memories of what once was [to prepare for] what is to come.” – Mud Turtle – Kesner

“Our ancestors were so on it that they were always connected to the signs of the changing.” – Aunty

“If we are tackling a problem as large as climate change adaptation, we have to step out of our boxes.” – Kalani

“We have no word for resources in our language. We have words for relatives.” – Wildcat

“The tree is not dreaming of becoming your chair.” – Kalani The tree’s dream is not to grow up to become your chair. The tree’s dream is to grow up and be a tree. If it has the same dreams and same intentions that we do, how is it that we don’t see them as relatives and not resources?

“Situations will come for which we don’t have an answer. The more we don’t have an answer the better.” – Robert Yazzie (Dine College)

If we have a problem, we already have a sense of how to restore it. If you see a vision, if the water’s rising, if the world is on fire, we already know what to do.

The importance of language and how it shapes our thoughts. Where do our words come from? What is the relationship between language and the land? Language elements hold ecological information. Example: many different words for the different kinds of rain, wind, soil, snow, etc. What happens if these descriptions no longer apply? What happens when the winds don’t behave the same way that they used to? How do we look at language and adapt?

Urgency to act

“Where is my family? What are they thinking? Are they thinking that this is beyond us?” - Aunty

“Thank you [Mother Earth] for showing us the signs... Hopefully we get it now, before it is too late” – Aunty

“The idea of pushing the problem to the next quantum level isn’t going to solve it.” – Mud Turtle

“We’re changing our behavior. We’re changing the way we look at it, and we’re just going to do it. The children are looking at us and asking “are we walking the talk?” Kesner

“Wherever we go, wherever you walk...are you always in your father’s house? Are you always on the breast of your mother? Do you always give thanks no matter where you go, who you are with for the gifts that you have received? Or is it when we think, this is the solstice; this is the time of prayer. Then it’s even more so. But we’re in a time different from that. Everything shows us that. Things are changing. How adaptable are we? Be the song that you sing. Be the Dance. Don’t talk about the story. Don’t be the story teller. Be the story.” - Aunty Rayleen

“When there was disaster and drought in the plains, word would spread quickly through communities to act. Today, there is no sense of urgency.” - Bull

We don’t need to worry about the environment, the ocean will always be the ocean, the air will always be the air, and the land will always be the land. What we need to worry about is the people who need the environment/nature to survive. We need to change our ways, if we don’t the people will not be here for very much longer.

Anger, frustration, and grief held by young ones as they watch their elders fight among themselves while the earth’s systems are giving out. Seeing what is as compared to what could be.

Why is indigenous knowledge vital?

“Indigenous people around the world have been paying very close attention to what’s going on, and we have a responsibility to speak out about that.” – Dan Wildcat

We are all seeing changes. We are seeing common themes around climate change resonating with elders from Samoa to Kansas. How do we ignore the messages? When we talk about peer reviewed information, how is this not the same thing? Indigenous people are seeing and talking about this all over the world. They are triangulating their data, confirming the changes they see. Jean Tanimoto (NOAA)

The indigenous perspective is a systems perspective. All of it is in context to what is around it. (As opposed to the Western perspective which often refines down processes and phenomena into small

discreet experiments that do not take into account the processes around it.) Each observation is taken in context. It is a data point on a continuum. Indigenous people understand the circumstances in which things occur, and its connection to the environment around it, so are able to adapt. (Jean Tanimoto, Kalani Souza)

The difference between (indigenous knowledge, traditional knowledge, Hawaiian science) and western science is the difference between constantly adapting based on connections and being static and focused on methodology. Now, as we are faced with the impacts/effects of climate change, those we are most connected with their environment will be able to 1) observe the changes, 2) understand the change, and 3) adapt to the change. It our way of life, it's intrinsic in everything we do. Kalani Souza

Hawaiians are navigators, and like navigators, they are used to constantly adjusting their trajectory based on what's going on around them. If they didn't they would get lost or blown off track. Our resource management system today has been blown off track because it's so slow to respond to changes. The value of traditional knowledge and management was that it was adaptable, constantly evolving, changing with the tides, adjusting with the wind – it required being one with the environment. Doc Tusi

Reflections of the inner landscape and how that reflects and creates the outer landscape.

Connectivity and Diversity

“Islands on the surface look like they are separate from one another, but, if you look closer, they are all connected in the deep” – Doc Tusi

“We don't refer to natural phenomenon as something that is separate from us” – Doc Tusi

“One leg on a table will tip over. Stability is within diversity. By maximizing [perspectives] we increase our diversity.” - Bull

How can indigenous knowledge help?

“Whenever there is a problem, there is a thought [solution] that comes up simultaneously” - Robert Yazzie

“Don't just talk about the past. Talk about the past with a purpose” – Robert Yazzie

“If you have the ability to think and reason, you have the key to taking action” – Robert Yazzie

“We're not talking about rights anymore. We're talking about responsibilities – that we *all* have.” – Wildcat

Spirits of the place will talk to you, if you don't listen, they will talk louder.

Process: Collaboration

"If you want our leadership, then we won't do it singlehandedly. We come as a group." - Robert Yazzie

Action: Maintain and grow PRiMO Ike Hui; increase diversity to build strength

Process: Conservation

"In America, a little kid will pile up all kinds of food. Indian thinking – just enough. Not to say more is better." – Robert Yazzie

"The water comes from God to the land and it gives us the opportunity to grow food. [In the traditional Hawaiian system] it is not captured but flows through to the next land and field and again and out to sea." – Uncle Sol (Sol Kaho'o halahala – Hawaiian elder ; Maui Co. Councilmen)

Action: Free the water for the people as was intended

We have outgrown the carrying capacity of the land, we are artificially supporting ourselves, created a pseudo-stability. We have land that is supposed to support the people, lays fallow, ready for development. We have created micro-climate change as well by cutting down trees and creating deserts. If we replant the land, we bring back the climate, and we heal the earth, the trees bring back the water, and the deserts are replaced.

Process: Food security

"Find the balance between the growth of houses and the growth of food." "Include agricultural infusion in urban sprawl." – Cliff

"In China and Tibet, I saw how they had cultivated every piece of land." "In the freeway strip, they are cultivating cabbage." "There's no such thing as rubbish lands." – Uncle Sol

"We have removed the cultural practice of creating abundance – our lo'i (wetland agricultural system) was planted not for today but for enough to share tomorrow. Our fishponds [were managed] for abundance." – Uncle Sol

Actions – agricultural easements, public land leases, public works agricultural projects, fishpond restoration.

In the past, Hawaiians used fish ponds (salt and freshwater), fishing koa (fishing grounds that were nourished and cared for by families) and permaculture principles in order to feed their people. The upper end estimate of population in the main Hawaiian islands, pre-western contact, was a million people. They were able to create food security through sustainable practices. Now, 85-90% of Hawaii's food is imported. - Sol and Jean

Kalaemanō salt production

Salt was produced at Kalaemanō in historical times in two ways. First natural basins in the Cliffside rocks were cleaned and prepared for winter wave deposits, which would evaporate, leaving salt behind that could be gathered once the waves subsided. The second way was through the construction and maintenance of salt basins which were formed by stacking rocks around smooth pahoehoe lava flats and sealing gaps in the rock rings using coral mortar. Seawater was poured into these pans to evaporate. Local people would come down for 2 weeks/year to tend the salt pans and harvest salt which could then be used to preserve meat and trade. Today the salt pans are being restored through community partnerships to maintain this resilient tradition.

Impacts on culture and indigenous peoples from climate change.

Do we need new olelo noeau – wise sayings – how we teach the children what the observations are and what they mean?

What is our relationship to the natural world and how does it change? If we believe that we are descendant from the coral polyp, what does it do to our identity when the coral reefs are destroyed because of ocean acidification and rising sea surface temperatures?

The wisdom and knowledge is held in the songs, dances, and art. What are the songs of the future? If climate change is changing weather patterns, will we need to create new songs, myths, and celebrations? Example: If the cloud induction zone becomes smaller, and the rain forest diminishes, what happens to the native birds and plants? How is their habitat changed/threatened? How will our kids know what it means to hear the bird songs and look for the signs of flowering trees that let us know that it is time to plant/harvest/fish, etc? (Kanekoa Kukea-Schultz)

Adaptation Strategies

Connections between education and outreach, the community and the environment.

Develop local food, energy, and economic systems

Plant long term crops higher in safe zones and use lower elevations for faster growing crops and annual crops.

Move important buildings, schools, fire departments, hospitals, etc to higher ground along the coast.

First things first: focus on what can be done now.

Learn what assumption we are holding and how it is limiting our capacity to see beyond what we know.

Research food sovereignty movement, rights of mother earth, rights of nature, rights of children precedents.

Restore fishponds, develop responsible aquaculture and aquaponics food systems to relieve the stresses on the oceans.

Mitigate erosion, focus on building healthy soil to support land based living systems.

Policy: Encourage policies that help support local economic independents and help keep wealth in the communities.

Choose policy makers that support the collective community agendas.

Learn what other communities in similar biomes are doing to adapt and sustain themselves and their environment. Cultural exchange programs.

Learn more about multi-functional plant educational plant systems integrated with water, soil building, and animal guilds.

Articulate sacred law and natural law.

Consider human migration patterns and evacuation plans and how to move populations from areas that will become inundated or unlivable from extreme flooding, repeated extreme hurricanes, tsunami, etc.

When will we learn to move at the speed of nature? What will we give up so that we can live?

Nahaku Kalei – Coastal Marine Fellow – Nature Conservancy Hawaii

Case Study Example: Mahuahua Ai o Hoi

Project Background:

The 405-acre property referred to as *Hoi*, or the He'eia Wetlands, is a marshland area formed by the waters of Ha'ikū and Ioleka'a valleys where wetland kalo was traditionally grown. Hoi lies within the ahupua'a of He'eia, in the District of Ko'olaupoko on the Island of O'ahu.

In January of 2010, Kāko'o 'Ōiwi acquired a 38-year lease for the property from the Hawaii Community Development Authority to promote educational programs, cultural use, ecological restoration and sustainable agriculture.

Consistent with traditional and historic land use of the property, and based on the vision for Hoi articulated by our Kūpuna and the community, Kāko'o 'Ōiwi created Māhuhua 'Ai o Hoi or "*re-planting the fruit of Hoi*" a community-driven project aimed at restoring the once thriving natural, cultural, social and economic values of Hoi for the benefit of the community.

Climate Change Adaptation Aspects of the Project:

Climate change is very much a concern for the community of Heeiea and our organization Kakoo Oihi. We are very aware that the climate change will have multiple and drastic effects on our community, our way of life and our ability to react and interact as a community. Our main concerns are focused on the near term effects through the overall decrease of rainfall with an increase in large downpours (intensity.) This double affect will create massive bleeding of sediment from our hillsides and deposit this sediment on our nearshore reefs thus killing them. In addition to this bleeding effect we are very concerned with the rise in sea level. We at Kakoo Oihi are looking to create taro patches. These taro patches are very much located right above sea level. We are concerned with as time progresses this salt water wedge through sea level rise will very much affect our ability and kill our taro.

Through the integration of traditional ecological knowledge strategy of Loko ia (Hawaiian fishpond ponds) we believe that we can help to buffer and mitigate certain climate change impacts. These types of fishponds are focused more in the production of fish and taro; these patches are broken into three patches Taro patches (loi kalo) and Taro patches with fish (loko ia kalo) and finally traditional freshwater fishponds. We believe the ponds will function first as retainment basins. During pulsing events these "retainment basins" will trap water and sediment or simply increasing residence time that allows for sediment and water to be absorbed into the land. The second impact is that the lower fishponds will function as physical freshwater buffer to the salt water wedge that will slowly creep up into our freshwater lense. These are simple methods that help to mitigate the impact of climate change, provide jobs and food for the community and also provide habitat for our native species.

In addition, the hope is that the water that flows through the restored wetland will be healthier and more nutrient rich when it flows into the bay. Right now, the land is covered with California grass (*Brachiaria mutica*) left from the most recent use of the land for cattle ranching. The California grass sits in dense layers over the wetland, "suffocating" the water that runs underneath it. The water currently flowing into the bay is severely depleted of oxygen and nutrients needed to create a healthy nearshore ecosystem. Preliminary testing has shown that replanting lo'i kalo (taro patches) helps to restore the oxygen levels of the water, which is essential for juvenile fish recruitment, nutrient enrichment for the native limu (seaweed and sea grasses) that grow in the nearshore, and the overall health of the reefs. It

is also the hope that a healthier water flow into the nearshore will help to mitigate some of the harmful effects of sea surface temperature rise associated with climate change.

Finally, Kakoo Oivi is planning for the future by experimenting with different varieties of kalo in order to find the most salt tolerant. The reality is, that as much work as they do to mitigate for salt water intrusion, eventually the effects of sea level rise will impact the wetland. Identifying the more salt tolerant plants now will allow them to provide food security for the community for a longer period of time.

Contact Koa Shultz (808-741-3403) or kanekoaks@gmail.com for more information on the project.